

DataON™ and Mellanox Empower Next-Gen Hyper-Converged Infrastructure



DataON™ Builds Microsoft Certified Hyper-Converged Cluster Appliances with Mellanox's Efficient Networking

Background

The sea change in enterprise IT infrastructure is largely driven by rapid business expansion with reduced IT budget. The legacy IT infrastructure no longer delivers the performance to support dynamically changing workspaces and more demanding environments, which leads to the rise of private and hybrid cloud-based data centers. Such modern data centers are built on hyper-converged infrastructure with these promises:

- Consolidating existing data center silos to streamline operations
- Simplifying the IT infrastructure for quick deployment and scale-out
- Improving agility to accommodate constantly changing business needs
- Minimizing downtime and preventing data loss

When enterprise IT organizations migrate to the hyper-converged cloud infrastructure, many deploy their data centers in Microsoft Windows Server environment, taking advantage of the latest Microsoft software-defined storage (SDS) with Windows Server 2016 and Storage Spaces Direct (S2D). Designed for Microsoft Windows Server and S2D, the DataON™ hyper-converged cluster platform, with high-performance Mellanox Ethernet solution, delivers optimized performance, manageability and scalability.

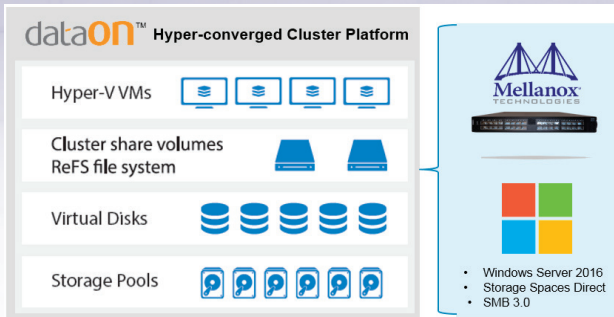
HIGHLIGHTS

- Industry leading performance – over 2.4M IOPS with NVMe SSDs
- Highly scalable – Up to 640 Hyper-V VMs per cluster
- Intelligent data protection on premises and in the cloud
- Advanced visibility and management with DataON MUST
- Mellanox end-to-end RDMA-capable networking solutions, enabling up to 100Gb/sec data communication
- Simple to deploy, flexible support for various rack configurations, and easy to scale from half-rack to multiple racks

DataON™ Hyper-Converged Cluster Appliance (HCCA)

Certified for Microsoft Windows Server 2016, the DataON™ Hyper-Converged Cluster Appliance (the S2D-3000 product family) optimizes the full stack of Microsoft S2D, from Scale-Out File System (SoFS) to Software Storage Bus to Storage and Networking hardware. The SD-3000 delivers resilient, higher-performance and scale-out infrastructure and management services for key Microsoft-based environments, such as Hyper-V, Storage Spaces Direct, and Storage Replica.

Based on the DataON™ ClusterBlock Architecture™ (CBA), the S2D-3000 HCCAs deliver maximum balanced IOPS performance for Microsoft Storage Spaces Direct and provides advanced monitoring and management services through the DataON™ MUST (Management Utility Software Tools) software. The following capabilities make the S2D-3000 ideal for deploying Microsoft Hyper-V®, Microsoft SQL, VDI, Hekaton, Microsoft Exchange Online, Microsoft SharePoint® and Microsoft Dynamics® ERP:



- Industry Leading Application Performance – The S2D-3110 HCCA with four (4x) cluster nodes is capable of providing over 2.4 million IOPS (running VMFleet) using the latest all flash NVMe™ based SSD technology to scale I/O intensive workloads.
- Storage and Network with SMB 3.0 over RDMA – Delivers highest throughput, lowest latency and increased CPU efficiency
- Hyper-Converged Scalability – Incremental compute, networking, and storage resources provide near-linear scalability. Each HCCA can also be expanded in capacity via 12G SAS JBODs for further storage expansion.
- Automated Deployment – Automated out-of-box workflow accelerates time to deployment for Windows Server 2016, Storage Spaces Direct, and Storage Replica environments.
- Integrated Data Protection and Guarded Fabric – Fully supports Windows Server 2016 with Shielded VM and TPM 2.0 trusted attestation for security and business continuity.

Mellanox End-to-End Ethernet Interconnect

High-bandwidth and low-latency networking is required for Microsoft Storage Spaces Direct running SMB3.0 over RDMA, especially with NVMe storage. At the same time, a reliable, easy-to-use and simply-to-scale network is always key to successful enterprise cloud deployment.

The Mellanox Spectrum™ 25/50/100G Ethernet switches, ConnectX®-4 Ethernet adapters and LinkX™ cables provide the highest performance, lowest latency, and most flexible and reliable interconnect for hyper-converged platforms. With RDMA/RoCE offload in the ConnectX-4 adapters and predictable high performance by the Spectrum switches, the Mellanox Ethernet solution accelerates Microsoft Storage Spaces Direct, unleashes the power of faster storage devices such as NVMe SSDs, and greatly improves server CPU and application efficiency. In particular, the Mellanox Spectrum switches are a great fit for DataON HCCAs in Microsoft software-defined data centers:

- Non-blocking switches with the most predictable network performance – The flagship SN2700 switch delivers 6.4Tb/s switching capacity with 4.77 bpps processing capacity; 300ns port-to-port latency with very little variation at any packet size and IO pattern
- Fast to deploy and scale – Spectrum switches provide 10/25/40/50/100G connections, 1-2-3 configuration of ports, VLANs and mLAG, and supports cloud deployment from half-rack and full-rack to multiple racks of hundreds of server nodes.
- Automated network configuration and management – REST-based Mellanox NEO™ allows zero-touch networking configuration and management of DataON™ HCCAs and creation/migration/deletion of Hyper-V virtual machines.
- Best rackspace, power and TCO efficiency – The Spectrum switches are ideal for high-density rack designs. Two half-width SN2100 switches side-by-side in 1RU space, with typical power consumption of 94 watts per switch, provide high availability in the Top-of-Rack and deliver great savings in both CAPEX and OPEX.

About DataON™

DataON™ is the industry leading provider of Hyper-Converged Storage Appliances for Microsoft enterprise applications, software defined storage and Azure cloud environments. DataON™ is focused on customers who have made the “Microsoft Choice,” and then helps them build the ultimate Microsoft software-defined data center with cost effective, modular and scalable appliances. DataON™ is the storage division of Area Data Systems. More information can be found at www.DataONstorage.com or via [@DataON](https://twitter.com/DataON).

“The DataON™ HCCA, with Mellanox networking, is built to automate and optimize Microsoft software-defined data centers for customers who have made the ‘Microsoft Choice’ for their data centers.”

*- Howard Lo
VP of Sales and Marketing
DataON™*

About Mellanox

Mellanox Technologies is a leading supplier of end-to-end Ethernet interconnect solutions and services for enterprise data centers, Web 2.0, cloud, storage and financial services. More information is available at www.mellanox.com.



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